

AMENDMENTS TO THE CLAIMS

C1
Cont Sub D1 → Claims 1-22 (Canceled).

23. (Currently Amended) An integrated circuit comprising:
a color sensor array having a plurality of sensor elements of ~~two~~ different first and second colors, arranged in rows and columns;
a first reset shift register having a plurality of outputs, each output being coupled to control a reset of ~~some of the~~ sensor elements of the first color that are in a respective one of the rows of the array;
a second reset shift register having a plurality of outputs, each output being coupled to control a reset of sensor elements of the second color that are in a respective one of the rows of the array;
a wordline shift register having a plurality of outputs, each output being coupled to control a readout of the sensor elements that are in a respective one of the rows of the array; and
control logic coupled to feed (a) ~~the reset shift register~~ each of the first and second shift registers with a pair of reset bits and (b) the wordline shift register with a read bit, and to operate the reset and wordline shift registers so that the pair of reset bits and the read bit shift through their respective registers while an image frame is being captured, with one of the reset bits of said pair always being one or more rows ~~behind~~ ahead of the read bit to mark the start of integration, and the other one of said pair to generate a correlated double sampling pixel reset value after each pixel integrated intensity value, and ~~the other reset bit being one or more rows ahead of the read bit, to mark the start of integration wherein the control logic is to program the reset bits of said pair to set the integration time independently for the first and second colors.~~

24. (Currently Amended) The integrated circuit of claim 23 wherein the plurality of sensor elements of the color sensor array are of red, green, and blue colors, the first color being red and the second color being green.

25. (Currently Amended) The integrated circuit of claim 24 wherein the plurality of sensor elements are CMOS active pixel elements with an RGB color filter array that has a Bayer pattern, the sensor array having ~~no more than two~~ reset metal

lines for each row that are coupled to a respective pair of outputs of the first and second registers.

C1
cont

26. (Currently Amended) The integrated circuit of claim 23 further comprising ~~second and third reset shift registers each~~ a third reset shift register having a plurality of outputs, each of ~~first, second, and third registers~~ output being coupled to control a reset of sensor elements of ~~only one~~ a third color, wherein the control logic is further coupled to feed (a) ~~the second reset shift register with a pair of reset bits and~~ (b) the third reset shift register with only one reset bit, and wherein the sensor elements whose reset is controlled by the third reset shift register have the longest integration time of the array.

D1
cont'd

27. (Currently Amended) A system comprising:
a color sensor array having a plurality of sensor elements of ~~two different~~ first and second colors, arranged in rows and columns, the elements of each column being coupled to share a respective one of a plurality of bitlines of the array;
a first reset shift register having a plurality of outputs, each output being coupled to control a reset of ~~some of the~~ sensor elements of the first color that are in a respective one of the rows of the array;
a second reset shift register having a plurality of outputs, each output being coupled to control a reset of sensor elements of the second color that are in a respective one of the rows of the array;
a wordline shift register having a plurality of outputs, each output being coupled to control a readout of the sensor elements that are in a respective one of the rows of the array;
control logic coupled to feed (a) ~~the reset shift register~~ each of the first and second registers with a pair of reset bits and (b) the wordline shift register with a read bit, and to operate the reset and wordline shift registers so that the pair of reset bits and the read bit shift through their respective registers while an image frame is being captured, with one of the reset bits always being one or more rows ~~behind~~ ahead the read bit to mark the start of integration, and the other one of said pair to generate a pixel reset level after each pixel integrated intensity level generated by the read bit, and ~~the other reset bit being one or more rows ahead of the read bit, to mark the start of integration wherein~~

the control logic is to program the reset bits of said pair to set the integration time independently for the first and second colors.;

signal and image processing circuitry coupled to the plurality of bitlines to digitize pixel levels produced by the sensor array;

a system controller coupled to control the sensor array and control logic so that pixel levels are read from the array one row at a time in accordance with the read bit, the controller being further coupled to control the signal and image processing circuitry to enable formation of a digital image file;

a host computer interface coupled to the system controller to pass the digital image file to a host computer ; and

a local user interface of the system, being coupled to the system controller.

28. (Currently Amended) The system of claim 27 wherein the plurality of sensor elements of the color sensor array are of red, green, and blue colors, the first color being red and the second color being green.

29. (Currently Amended) The system of claim 28 wherein the plurality of sensor elements are CMOS active pixel elements with an RGB color filter array that has a Bayer pattern, the sensor array having ~~no more than~~ two reset metal lines for each row that are coupled to a respective pair of outputs of the first and second registers.

30. (Currently Amended) The system of claim 27 further comprising ~~second and third reset shift registers each~~ a third reset shift register having a plurality of outputs, each of ~~first, second, and third registers~~ output being coupled to control a reset of sensor elements of ~~only one~~ a third color, wherein the control logic is further coupled to feed (a) ~~the second reset shift register with a pair of reset bits and~~ (b) ~~the third reset shift register with only one reset bit~~, and wherein the sensor elements whose reset is controlled by the third reset shift register have the longest integration time of the array.